

NCDVLS Annual Report

North Carolina Veterinary Diagnostic Laboratory System Volume 7

2018-2019



**North Carolina Department of Agriculture
& Consumer Services
Veterinary Division**

Steven W. Troxler, *Commissioner of Agriculture*

R. Douglas Meckes, *State Veterinarian*

James Trybus, DVM, DACVP, *Director of Laboratories*

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NCVDLS Mission Statement

It is the mission of the North Carolina Veterinary Diagnostic Laboratory System to provide veterinarians, the animal industry and the citizens of North Carolina with accurate and timely laboratory support services in order to diagnose, conduct surveillance and assist in responding to and preventing animal disease. Both protection of public health and the food supply are important components of this mission.

Message from Director

On an annual basis, we assemble summaries of the activities within the North Carolina Veterinary Diagnostic Laboratory System (NCVDLS). The information contained within is for the period between July 1, 2018 and June 30, 2019. Data from all four laboratories comprising our system are included.

We hope you find this information to be both interesting and informative. Our goal, as always, is to provide clients with accurate and timely service to meet our Mission, as stated above. Please do not hesitate to contact me about this annual report, if you have any questions.

Respectfully yours,

A handwritten signature in blue ink, appearing to read 'James Trybus', with a stylized flourish at the end.

James Trybus, DVM, D-ACVP



NCVDLS Facilities

**Rollins Animal Disease
Diagnostic Laboratory
2101 Blue Ridge Road
Raleigh, NC 27607
(919) 733-3986**

**Griffin Animal Disease
Diagnostic Laboratory
401 Quarry Road
Monroe, NC 28112
(704) 289-6448**

**Northwestern Animal Disease
Diagnostic Laboratory
1689 North Bridge Street
Elkin, NC 28621
(336) 526-2499**

**Western Animal Disease
Diagnostic Laboratory
785 Airport Road
Fletcher, NC 28732
(828) 684-8188**

NCVDLS Facilities and Laboratory Personnel

Rollins Animal Disease Diagnostic Laboratory

1031 Mail Service Center
Raleigh, NC 27699-1031
Phone: (919) 733-3986
Fax: (919) 733-0454

Director of Laboratories

James Trybus, DVM, D-ACVP

Assistant Director

Binu Velayudhan, BVSc, MVSc, PhD, DACVM, MBA

Administrative Staff

Kristi Watson	Administrative Officer I, Section Supervisor
Mechelle Johnson	Administrative Assistant I
Casey Strickland	Processing Assistant IV
Scott McCullen	Processing Assistant IV
Christopher Minor	Medical Laboratory Assistant II
Heather McLean	Processing Assistant V
Cindy Orlosky	Processing Assistant V
Brandy Rodgers	Processing Assistant IV
Dell Weaver	Medical Laboratory Assistant II
James Brown	Processing Assistant III
Jenny Hurley	Veterinary Laboratory Assistant

Building Maintenance

Joey Stephenson	Maintenance Mechanic IV
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Information Technology

Josh Shepard	Business Technology Applications Analyst, Section Supervisor
Talley Ouro	Business Technology Applications Analyst

Avian Pathologist

Tahseen Abdul Aziz, DVM, MS, PhD, D-ACPV

Anatomic Pathologists

Allison Boone, DVM, D-ACVP
Steve Rushton, DVM, D-ACVP
Allison Tucker, MS, VMD, D-ACVP

Diagnosticians

Mahogany Ceasar, MS, DVM
Jennifer Haugland, DVM

Stacy Robinson, DVM

Necropsy Assistant

Andrew Chaney, BS

Medical Laboratory Technician II

Histopathology

Nabil Elhertani, BS

Jennifer Burgoyne, BS

Judy Liverman

Michelle Price

Medical Laboratory Supervisor

Medical Laboratory Technician II

Medical Laboratory Technologist I

Medical Laboratory Technologist I

Immunohistochemistry

Vincent Capizzi, AAS

Medical Laboratory Technologist II

Quality Assurance and Safety

Tina Buffington, BS

Ghazala Jawad, MS

Connie Howen

Paul Hutter, BS

Medical Laboratory Supervisor III, Quality Manager

Medical Laboratory Supervisor III, Quality Manager

Processing Assistant V

Safety Officer III, Division Safety Officer

Bacteriology and Bacterial Serology Section Head

Anil Thachil, BVSc, MVSc, PH.D, DACVM

Bacteriology

Elizabeth Ortiz, BS

Melissa Cox, MS

Megan Flowers, BS

Leonia Goldbach, MS

Jessica Smith, BS

Kelly Hodges, BS

Richard Koch

Jeri Smart, BS

Medical Laboratory Supervisor I, Section Supervisor

Medical Laboratory Technologist I

Medical Laboratory Technologist I

Medical Laboratory Technician II

Medical Laboratory Technologist I

Medical Laboratory Technologist I

Medical Laboratory Technologist I

Medical Laboratory Technologist I

Serology

Kristie Freeman, BS

Brandon Brown, BS

Edie Noel

Aisha Phipps, BS

ASCP Medical Laboratory Technologist III, Section Supervisor

Medical Laboratory Technologist I

Medical Laboratory Technologist I

Medical Laboratory Technologist I

Molecular and Virology Section Head

Neeti Dahal, BS, PhD

Molecular Diagnostics

Beverly Wood, BS

Chad Menard, BS

Alla Manakhova, BS

Haley Sutton, BS

Adam Beard

MT-ASCP Laboratory Medical Specialist, Section Supervisor

Medical Laboratory Technologist III

Medical Laboratory Technologist II

Medical Laboratory Technologist II

Medical Laboratory Technologist II

Virology

Younghee Lee, BS
Susan Barrameda, BS
Jonathon Fox, BS
Christie Lopez, MS
Kim Howle, BS, MS
Charita McClees, BS
Angela Murphy, BS
Donna Ridenhour, AAS
Kaitlyn Oliphant, BS

Laboratory Medical Specialist
Medical Laboratory Technologist I
Medical Technician II
Medical Laboratory Technologist I
Medical Laboratory Technologist III
Medical Laboratory Technologist I
Medical Laboratory Technologist II
Medical Laboratory Technologist I
Medical Laboratory Technician II

NCVDLS Branch Laboratories

Griffin Animal Disease Diagnostic Laboratory

401 Quarry Road
Monroe, NC 28112
Phone: (704) 289-6448
Fax: (704) 283-9660

Heather Wyss, DVM
Elsie Lavie, DVM
Melissa Ingram
Carrie Lichtenhan, BS
Brittany Bivens

Director
Veterinary Diagnostician
Medical Laboratory Technician II
Medical Laboratory Technologist I
Administrative Specialist I

Northwestern Animal Disease Diagnostic Laboratory

1689 North Bridge Street
Elkin, NC 28621
Phone: (336) 526-2499
Fax: (336) 526-2603

David Ackerman, DVM
Jessica Kees, DVM
Terri Jessup, BS
Marcie Sotelo
Dana Kelly
Deborah Jones, AAS

Director
Veterinary Diagnostician
Medical Laboratory Technologist II
Processing Assistant IV
Veterinary Laboratory Assistant I
Medical Laboratory Technician II

Western Animal Disease Diagnostic Laboratory

785 Airport Road
Fletcher, NC 28732

Phone: (828) 684-8188
Fax: (828) 687-3574

Richard Oliver, DVM
David Drum, DVM
Jill Hill
Lia Barth, BS
Wilson Smith
Mary Swanson, DVM

Director
Veterinary Diagnostician
Processing Assistant IV
Medical Laboratory Technician II
Medical Laboratory Assistant II
Medical Laboratory Technician II



Service Milestones 2018-2019

Dr. James Trybus	5 years
Dell Weaver	25 years
Joey Stephenson	15 years
Dr. Allison Boone	5 years
Dr. Allison Tucker	10 years
Elizabeth Ortiz	15 years
Megan Flowers	5 years
Richard Koch	5 years
Chad Menard	15 years
Jonathan Fox	10 years
Angela Murphy	20 years
Dr. Jessica Kees	5 years
Lia Barth	30 years

Retirements

Cindy Nipper	Rollins Laboratory	4/1/2019
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External Laboratory Advisory Committee Members

NAME	EMAIL ADDRESS
Deborah Johnson, Executive Director NC Pork Council	deborah@ncpork.rog
Dr. Eric Gonder, Veterinarian Butterball	egonder@butterball.com
Dr. Allen Cannedy Small Ruminant Veterinarian	goat-doc@mymobilevet.com
Sue Gray, Executive Director NC Horse Council	suegray@nchorsecouncil.com
Dr. Randy Jones Mixed Animal Veterinarian Swine Practice, Kinston, NC	rjones@livestockvet.com
Harry Snelson, Executive Director American Association of Swine Veterinarians	snelson@aasv.org
Bryan Blinson, Executive Director NC Cattlemen	bryan@nccattle.com
Don Butler, Director of Government Relations & Public Affairs Murphy Brown	dpbutler@smithfield.com
Dr. Becky Tilley, Veterinarian Butterball	btilley@butterball.com
Dr. Betsy Sigmon, Veterinarian Small Animal Practice	btsigmon@aol.com
Dr. Chad Smith, Veterinarian Swine Practice, Goldsboro Milling	chad.smith@goldsboromilling.com
Dr. Paula Cray, Department Head Population Health & Pathobiology, NCSUCVM	pjcray@ncsu.edu
Dr. Richard Kirkman, Veterinarian Large Animal, Siler City, NC	rkirkman@combuy.com

The NCVDLs established an External Laboratory Advisory Committee (ELAC) in 2005. Our initial purpose was to better serve our clients by uniting a diverse group of veterinarians and industry representatives to discuss the laboratory's offered services, as well as legislation that directly affected our mission. We are appreciative of their time and advice.

NAME	EMAIL ADDRESS
Dr. Rich Sharpton, Veterinarian Poultry, Perdue Milling	rick.sharpton@perdue.com
Dr. Shannon Jennings, Veterinarian Poultry, House of Raeford	shannon.jennings@houseofraeford.com
Dr. Jennifer Haugland, Veterinarian Diagnostician NCDA&CS, Rollins Animal Disease Diagnostic Laboratory	jennifer.haugland@ncagr.gov
Norman Jordan, Past President NC Dairy Producers Association	njordan7483@gmail.com
Reid Smith, Current President NC Dairy Producers Association	reid@linwooddairygroup.com
Dr. Douglas Meckes, State Veterinarian NCDA&CS, Veterinary Division	doug.meckes@ncagr.gov
Dr. James Trybus, Director of Laboratories NCDA&CS, Veterinary Division	james.trybus@ncagr.gov
Bob Ford, Executive Director Poultry Federation	rlford@ncpoultry.org
Dr. Glen Almond, Veterinarian NCSUCVM	gwalmond@ncsu.edu
Dr. Perry Harms, Veterinarian Murphy Brown	pharms@smithfield.com
Kent Yelverton, Division Director NCDA&CS, Property & Construction	kent.yelverton@ncagr.gov
Megan Jacob, Laboratory Director NCSUCVM	megan_jacob@ncsu.edu
Chester Lowder, Livestock Director Farm Bureau	chester.lowder@ncfb.org
Jan Kelly, Executive Director NC Egg Association	egg lady@ncegg.org

Professional Development and Outreach

NAME	MEETING	CITY	DATE
Dr. James Trybus	2018 USAHA/AAVLD Annual Mtg	Kansas City, MO	10/18/2018
Dr. Tahseen Aziz	National Meeting on Poultry Health	Ocean City, MD	10/09/2018
Dr. Jennifer Haugland	N. Carolina Veterinary Conference	Raleigh, NC	11/02/2018
Dr. Mahogany Caesar	Keystone Veterinary Conference	Hershey, PA	8/16/2018
Dr. Stecy Robinson	2018 NCVC Conference	Raleigh, NC	11/2/2018
Dr. David Drum	2017 South Carolina Vet Conf.	Greenville, SC	11/08/2018
Dr. David Drum	Potential legal & animal cruelty cases	Athens, GA	8/18/2018
Dr. David Ackerman	2018 USAHA/AAVLD Annual Mtg	Kansas City, MO	10/18/2018
Ghazala Jawad	2018 USAHA/AAVLD Annual Mtg	Kansas City, MO	10/18/2018
Ghazala Jawad	Qualtrax User Conference	Blacksburg, VA	4/30/2019
Ghazala Jawad	NAHLN/AAVLD Quality Management	Ames, IA	8/07/2018
Tina Buffington	2018 USAHA/AAVLD Annual Mtg	Kansas City, MO	10/18/2018
Tina Buffington	Qualtrax User Conference	Blacksburg, VA	4/30/2019
Dr. Jessica Kees	2018 ACVP & ASVCP Annual Mtg	Washington DC	11/03/2018
Dr. Richard Oliver	2018 USAHA/AAVLD Annual Mtg	Kansas City, MO	10/18/2018
Dr. Heather Wyss	International Veterinary Seminar	Kiawah Island, SC	4/05/2018

Laboratory System – General Funds

Budget Summary	2017-2018	2018-2019
Purchased Contractual Services 5321	\$286,515	\$270,573
Utility/Energy Services 5322	\$303,729	\$370,845
Repair Services 5323	\$114,291	\$118,922
Maintenance Agreements 5324	\$143,454	\$133,532
Rentals/Leases 5325	\$4,195	\$4,763
Travel & Other Employee Expense 5327	\$30,562	\$30,852
Communications & Data 5328	\$139,340	\$149,930
Other Services 5329	\$37,528	\$36,424
General Admin Supplies 5331	\$29,882	\$17,870
Facility & Hardware Supplies 5332	\$27,272	\$21,663
Vehicle/Equipment Operating Supplies 5333	\$267	\$2,299
Clothing & Recreational Supplies 5335	\$718	\$321
Research/Development & Edu Supplies 5337	\$1,018,519	\$1,194,833
Other Materials & Supplies 5339	\$15,944	\$19,571
Equipment 5345	\$74,529	\$239,389
Art, Other Artifacts & Literature 5346	\$0	\$0
Intangible Assets (Computer Software) 5347	\$31,219	\$32,732
Legal, Licenses & Permit Costs 5351	\$8,696	\$5,952
Other Admin Expenses 5358	\$7,235	\$4,377
Other Expenses 5359	\$12,852	\$11,791
Transfer of Appropriations 5389	\$0	\$0
TOTAL	\$2,286,747	\$2,666,639
Personal Services (Salaries, Benefits, etc.)	\$5,263,017	\$5,763,019
TOTAL	\$7,549,764	\$8,429,658

2018/2019 Recurring Cooperative Agreements/Research Agreements

USDA-APHIS-VS Blanket Purchase Agreement - \$24,440

- BSE Surveillance Sample Collection and Testing

USDA-APHIS-VS Blanket Purchase Agreement - \$6,480

- Scrapie Collection and Testing

USDA-APHIS-VS Swine Surveillance Cooperative Agreement - \$30,000

- Surveillance and testing of Classical Swine Fever, African Swine Fever, and other foreign animal disease

USDA-NIFA Cooperative Agreement - \$328,000

- To aid the Food and Agriculture Defense Initiative for surveillance and early detection of animal diseases

Proficiency Testing

All four NCVLS laboratories participate in proficiency testing from outside agencies. In addition to the external proficiency tests, laboratory sections participate in internal testing.

Blind Sample Tests are administered by section supervisors to random technologists. Samples have “dummy” accession numbers and are incorporated into the daily workload. When complete, test results are evaluated by section supervisors for accuracy and timeliness. Round-Robin tests serve as interlaboratory comparisons between NCVLS facilities.

External Proficiency Testing	Test	Laboratory Section	Administering Agency
Salmonella Group D	Environmental Culture	Rollins Lab Bacteriology	NPIP/ NVSL
Avian Influenza	Matrix Primer/Probe Sets - H5 and H7	Rollins Lab Molecular	NAHLN
Avian Paramyxovirus - 1	END/NDV Matrix and Fusion Primer/Probe Sets	Rollins Lab Molecular	NAHLN
Classical Swine Fever – Foot and Mouth Disease	Real-Time PCR	Rollins Lab Molecular	NAHLN
Foot and Mouth Disease	ELISA	Rollins Lab Molecular	APHIS
MG & MS	PCR	Rollins Lab Molecular	NPIP
African Swine Fever and Rinderpest Virus	PCR	Rollins Lab Molecular	NAHLN
Influenza IHC Panel	Ring Test	Rollins Lab IHC	AAVLD/ NVSL
West Nile Virus Panel	Ring Test	Rollins Lab IHC	AAVLD/ NVSL
Leptospirosis IHC Panel	Ring Test	Rollins Lab IHC	AAVLD/ NVSL
Brucellosis	BAPA, Card	Rollins Lab Serology	NVSL

MG Serum Agglutination	PLATE	Rollins Lab Serology	PDRC
MS Serum Agglutination	PLATE	Rollins Lab Serology	PDRC
MG & MS	ELISA & HI	Rollins Lab Serology	NPIP
Anaplasmosis	ELISA	Rollins Lab Serology	NVSL
Leptospirosis		Rollins Lab Serology	NVSL
Johne's Disease Serologic	ELISA	Rollins Lab Serology	NVSL
Avian Influenza	ELISA	Rollins Lab Virology	NVSL
Bovine Leukosis Virus	ELISA	Rollins Lab Virology	NVSL
Bluetongue		Rollins Lab Virology	NVSL
Johne's Disease Serologic	AGID	Rollins Lab Virology	NVSL
Pseudorabies	ELISA	Rollins Lab Virology	APHIS/ NVSL
Equine Infectious Anemia	AGID	Rollins Lab Virology	NVSL
Salmonella Group D	Environmental Culture	Monroe Lab Bacteriology	NPIP
MG Serum Agglutination	PLATE	Monroe Lab Serology	PDRC
MS Serum Agglutination	PLATE	Monroe Lab Serology	PDRC
MG & MS	ELISA & HI	Monroe Lab Serology	NPIP
Avian Influenza Virus	ELISA	Monroe Lab Virology	
Brucellosis	BAPA, Card	Arden Lab Serology	NVSL/ BAPA
Equine Infectious Anemia	AGID	Arden Lab Virology	NVSL
Avian Influenza Virus		Elkin Lab Serology	
MG Serum Agglutination	PLATE	Elkin Lab Serology	PDRC
MS Serum Agglutination	PLATE	Elkin Lab Serology	PDRC
MG & MS	ELISA	Elkin Lab Serology	NPIP

Total Test Count by Animal Species

Avian	1,096,920	92.28%
Bovine	17,023	1.43%
Canine	37,242	3.13%
Caprine	7,603	.64%
Equine	14,779	1.24%
Feline	6,994	.59%
Fish	236	.02%
Miscellaneous	2,480	.21%
Ovine	1,232	.10%
Porcine	4,178	.35%
TOTAL	1,188,687	100.00%

Fiscal Year Comparison of Accessions FY 2017/2018 to FY 2018/2019

	2017-2018	2018-2019	%Increase
Rollins	35,788	35,919	.37%
Western	1,226	1,101	-10.20%
Northwestern	4,629	4,346	-6.11%
Griffin	2,848	2,863	.53%
TOTAL	44,491	44,229	-.59%

NCVDLS Total Test Count and Accession Count Comparison

Year	Test Count	Accession Count
2014-2015	1,327,846	37,483
2015-2016	1,327,846	39,594
2016-2017	1,332,319	41,281
2017-2018	1,210,322	44,491
2018-2019	1,202,122	44,229

NCVDLS Test Count Comparison by Laboratory Discipline

Laboratory Discipline	2015-2016	2016-2017	2017-2018	2018-2019
Bacteriology	15,046	14,761	15,869	14,810
Cytology	2,027	2,197	2,456	2,526
Histopathology	46,063	44,006	47,325	49,514
Immunohistochemistry	794	897	866	877
Molecular Diagnostics	16,724	17,954	27,013	27,883
Mycology	230	251	247	235
Necropsy	6,476	6,911	8,953	8,487
Outsource	1,218	1,317	1,170	1,374
Parasitology	3,053	3,023	3,173	3,220
Serology	932,376	879,663	818,920	803,140
Virology	308,312	307,479	284,330	283,299
TOTAL	1,332,319	1,278,459	1,210,322	1,195,365

Accession Counts Comparison by Fiscal Years

Lab	2015-2016	2016-2017	2017-2018	2018-2019
Rollins Lab	30,101	32,265	35,788	35,919
Griffin Lab	3,495	3,163	1,226	2,863
Northwestern Lab	4,709	4,579	4,629	4,346
Western Lab	1,289	1,274	2,848	1,101
	39,594	41,281	44,491	44,229

Test Counts Comparison by Fiscal Years

Lab	2015-2016	2016-2017	2017-2018	2018-2019
Rollins Lab	542,272	547,927	573,332	587,599
Griffin Lab	224,874	191,296	173,573	176,010
Northwestern Lab	562,254	536,713	461,101	436,465
Western Lab	2,919	2,523	2,316	2,048
	1,332,319	1,278,459	1,210,322	1,202,122

Top Twenty-Five Tests	2016-2017	2017-2018	2018-2019
Mycoplasma gallisepticum (ELISA)	301,506	357,699	360,619
Mycoplasma synoviae (ELISA)	301,513	358,082	360,340
Avian Influenza (ELISA)	115,587	122,919	127,526
Avian Influenza (AGID)	131,537	100,080	93,878
Histopathology H & E	41,686	44,599	45,842
Mycoplasma meleagridis (ELISA)	44,728	41,004	42,114
Avian Influenza Matrix RRT-PCR	9,386	13,792	13,996
Salmonella pullorum (Plate)	10,200	9,384	11,700
REO (ELISA)	9,831	9,371	10,476
Equine Infectious Anemia (AGID)	9,704	10,030	10,364
Infectious Bursal Disease (ELISA)	9,861	9,236	9,867
Avian Paramyxovirus (ELISA)	8,825	8,944	9,208
Infectious Bronchitis Virus (ELISA)	9,065	8,755	9,208
Aerobic Culture	7,313	8,023	7,462
Mycoplasma gallesepticum PCR	3,456	5,559	6,359
Mycoplasma synoviae PCR	3,470	5,613	5,899
Salmonella pullorum (Tube)	2,858	7,808	5,340
Mycoplasma synoviae (Plate)	102,011	14,246	5,254
Brucella abortus (Plate)	4,044	4,765	5,247
Mycoplasma gallisepticum (Plate)	102,500	13,774	5,056
Gross Exam Poultry	3,657	4,642	4,587
Chicken Anemia Virus (ELISA)	3,472	2,961	2,878
Antimicrobial Susecptibility	2,493	3,093	2,849
Cytology	2,198	2,457	2,526
Johne's (ELISA)	1,796	2,425	2,367